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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/547,793	04/12/2000	Derek Penn	1881.0120001	5441

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EXAMINER

FERRIS III, FRED O

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 10/28/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/547,793

Applicant(s)

PENN, DEREK

Examiner

Fred Ferris

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. *Claims 1-31 have been presented for examination based applicant's second preliminary amendment filed 10 January 2002 (paper #7). Claims 1-31 have been rejected by the examiner.*

Drawings

2. *This application has been filed with informal drawings that are acceptable for examination purposes only. Formal drawing will be required when the application is allowed.*

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. *Claims 1-31 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility. Specifically, claims 1-31 are drawn to a method for configuring a stochastic simulation model. The Examiner submits that Applicant's have not recited any limitations relating to a practical application in the technological arts. (see MPEP 2106)*

An invention which is eligible for patenting under 35 U.S.C. § 101 is in the "useful arts" when it is a machine, manufacture, process or composition of matter, which produces a concrete, tangible, and useful result. The fundamental test for patent eligibility is thus to determine whether the claimed invention produces a "useful,

concrete and tangible result.” *The test for practical application as applied by the examiner involves the determination of the following factors:*

(1) “Useful” - *The Supreme Court in Diamond v. Diehr requires that the examiner look at the claimed invention as a whole and compare any asserted utility with the claimed invention to determine whether the asserted utility is accomplished.*

(2) “Tangible” - *Applying In re Warmerdam, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994), the examiner will determine whether there is simply a mathematical construct claimed, such as a disembodied data structure and method of making it. If so, the claim involves no more than a manipulation of an abstract idea and therefore, is nonstatutory under 35 U.S.C. § 101. In Warmerdam the abstract idea of a data structure became capable of producing a useful result when it was fixed in a tangible medium which enabled its functionality to be realized.*

(3) “Concrete” - *Another consideration is whether the invention produces a “concrete” result. Usually, this question arises when a result cannot be assured. An appropriate rejection under 35 U.S.C. § 101 should be accompanied by a lack of enablement rejection, because the invention cannot operate as intended without undue experimentation.*

The Examiner respectfully submits, under current PTO practice, and in view of the 112(1) rejections, that the claimed invention does not recite either a useful, concrete, or tangible result and is merely drawn to a mathematical algorithm.

- The invention is not useful as a result of the 112(1) rejections which make it difficult to determine Applicant’s invention.

*- The claims are not concrete because the results are not assured. Is a solution possible for any and all arbitrary inputs? For example, is it possible to **create an arbitrary complex functional expression for any intermediary adapter object?***

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. *Claims 1-31 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for financial planning, does not reasonably provide enablement for configuring any stochastic simulation model. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. Specifically, independent claims 1, 2, 13, and 24 are drawn to configuring a stochastic simulation model by creating an arbitrary complex functional expression and adapter object. Applicant's specification refers to uses for the claimed that appear to be drawn solely to financial planning (pages 14, 16, 21) and has not disclosed or claimed any other practical application for the claimed invention. Accordingly, the specification does not provide enablement for configuring any stochastic simulation model. Dependent claims inherit this defect.*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, and 3-23 are rejected under 35 U.S.C. 112, second paragraph. The term "arbitrary" in claims 1 and 13 is a relative term which renders the claim indefinite.

The term "arbitrary" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Dependent claims inherit this defect.

While the specification for the claimed invention is delinquent in the areas cited under 112(1) and 101 rejections, the examiner has made prior art rejections based on the limited scope of information contained in the specification and interpretation of the language of the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 5,526,065 issued to Hinsberg et al in view of U.S. Patent 6,167,533 issued to Potterveld et al.

Independent claims 1, 2, 13, and 24 are drawn to:

Method and computer code for configuring a **stochastic simulation model** by:
Creating arbitrary **complex functional expression** from **components**
Creating adapter **object** as **intermediary** between **expression** and **target domain object**

Regarding independent claims 1, 2, 13 and 24: Hinsberg discloses a **stochastic simulation** method and system that allows programmable user **configuration** (creating means) of a **simulation model** (time based) and includes a **library of objects** (CL10-L29) for the creation functions (complex expressions) created from components and configured at run-time. (Abstract, Summary of Invention, CL3-L16-65, CL4-L57-CL5-L37, CL7-L1-57, CL9-L7-59, CL10-L10-65, figs. 4-7)

Hinsberg does not explicitly teach an intermediary (proxy) between an expression and target object.

Potterveld discloses a **proxy expression** engine that acts as an **intermediary** (**proxy**: known in the art) for pre-evaluation of **expressions** between **target** (objects) and properties.

It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of Hinsberg relating to a **stochastic simulation** method and system that allows programmable **configuration** of a **simulation model** including a **library of objects**, with the teachings of Potterveld

*relating to a **proxy expression** engine that acts as an **intermediary (proxy)** for pre-evaluation of **expressions**, to realize the claimed invention. An obvious motivation exists since this area of technology is highly competitive with many types of stochastic process simulators available in the market place and large amounts of money being spent in product development and improvement. (See; U.S. 5,625,579 column 2, lines 15-65, for example) Accordingly, a skilled artisan would have made an effort to become aware of what capabilities had already been developed in the market place and, hence, would have been motivated to modify the teachings of Hinsberg with the teachings of Potterveld in order to reduce development time and cost.*

*Regarding dependent claims 2-12, 14-23, and 25-31: As cited above, Hinsberg teaches **user defined** (programmable) **input/output** of parameters and properties relating to **configuration** of the **simulation model**, **time interval** based simulation (period), **run-time evaluation**, and **updating object states**. (CL3-L16-65, CL4-L57-CL5-L37, CL7-L1-57, CL9-L7-59, CL10-L10-65, figs. 4-7) As also cited above, Potterveld discloses an **expression engine** that receives inputs/outputs and **evaluates expressions** based on **object relationships** and **properties**. (i.e. equivalent to the framework/engine). It would also have been obvious to store output property values as a data structure using an n-dimensional matrix data structure since matrix data structures are well-known and commonly used in the art.*

Conclusion

6. *The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, careful consideration should be given prior to applicant's response to this Office Action.*

U.S. Patent 6,278,898 issued to Shah teaches identification of stochastic models.

U.S. Patent 5,625,579 issued to Hinsberg teaches stochastic simulation methods.

"Rare Event Simulation in Stochastic Model", P. Shahabuddin, Proceedings 1995

Winter Simulation Conference, pp. 178-185, IEEE 1995 teaches simulation in stochastic models.

"Modeling Dependencies in Stochastic Simulation Inputs", J. Wilson, Proceeding 1997

Winter Simulation Conference, pp. 47-52, IEEE 1997 teaches simulation in stochastic models.

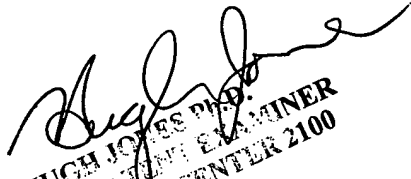
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 703-305-9670 and whose normal working hours are 8:30am to 5:00pm Monday to Friday.

Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 703-305-3900.

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October 23, 2003